



FL45200A Series



In-Line Flowmeters with Half Union Adapters



Operator's Manual

www.Omega.com



Servicing USA and Canada: Call OMEGA Toll Free

USA

OneOmega Drive, Box 4047
Stamford,CT 06907-0047
Telephone(203)359-1660
FAX: (203)359-7700

Canada

976Bergar
Laval(Quebec)H7L 5A1
Telephone(514)856-6928
FAX: (514)856-6886

Sales Service: 1-800-826-6342 / 1-800-TC-OMEGASM
Customer Service: 1-800-622-2378 / 1-800-622-BESTSM
Engineering Service: 1-800-872-9436 / 1-800-USA-WHENSM
TELEX: 996404 EASYLINK: 62968934 CABLE: OMEGA

Servicing Europe: United Kingdom Sales and Distribution Center

25 Swannington Road, Broughton Astley, Leicestershire
LE9 6TU, England
Telephone: 44 (1455) 285520 FAX: 44 (1455) 283912

The OMEGA Complete Measurement and Control Handbooks & Encyclopedias

- ✓ Temperature
- ✓ Pressure, Strain & Force
- ✓ Flow and Level
- ✓ pH and Conductivity
- ✓ Data Acquisition Systems
- ✓ Electric Heaters
- ✓ Environmental Monitoring and Control



Call for your FREE Handbook Request Form Today (203) 359-RUSH

CAUTION

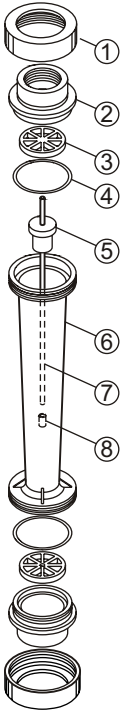
FOLLOW INSTRUCTIONS TO AVOID FAILURE

1. Finish piping to be plumb and true.
2. Polysulfone and other exotic plastics cannot tolerate P.V.C. glue and pipe dope. Even the fumes can cause crazing.
3. Use teflon tape for threaded joints.
4. Make up assembly and fit pipes, then: remove F.M. after glue fumes are vented out.
5. Meter cannot support attached pipes.
6. Excessive vibration may cause float to give poor reading or cause possible fracture.
7. Wall, floor, and ceiling mounts to be carefully aligned and sturdy. A support should be at top and bottom of meter. See drawing.
8. Hand tighten union nuts. No wrenches.
9. Protect meter from ultra violet (UV) rays.
10. VALVES - avoid system that will impose a sudden burst of flow to the meter. Such a burst will cause the float to impact the guide assembly with destructive force. Magnet, solenoid, or other quick opening valves cannot be used unless meter is protected against sudden burst of flow.
11. Failure to comply VOIDS WARRANTY!

| Part Number (316 SS Float) | Part Number (Hastelloy C Float) | Calibration | | | |
|-------------------------------|------------------------------------|-------------|---------|--------|--------|
| | | GPM | LPM | SCFM | M3/HR |
| FL45201A* | - | 2-20 | 8-78 | - | - |
| FL45202A | FL45202A-HL | 6-60 | 30-230 | - | - |
| FL45203A | FL45203A-HL | 8-80 | 30-300 | - | - |
| FL45204A | FL45204A-HL | 6-100 | 20-380 | - | - |
| FL45205A | FL45205A-HL | 20-130 | 80-500 | - | - |
| FL45206A | FL45206A-HL | 25-175 | 100-675 | - | - |
| FL45230A | - | - | - | 40-240 | 70-400 |

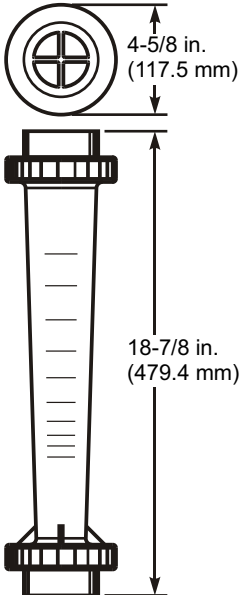
* Teflon® float

PARTS LIST



| Key | Part Number | Description |
|-----|-------------|-------------|
| 1. | F-452004N | Lock Nuts |
| 2. | F-452330N | Adaptor |
| 3. | F-452002 | Wireholder |
| 4. | F-452043N | O-ring |
| 5. | | *Float |
| 6. | | *Meterbody |
| 7. | F-452287N | Guide Wire |
| 8. | F-452332N | Float Stop |

*Float & Meterbody must be ordered as a kit.



Materials of Construction

- Meter Body:** Polysulfone
- Float:** #316 Stainless Steel or Teflon or Hastelloy C-276 (Based on model)
- Guide rod:** # 316 Stainless (opt. Hastelloy C-276)
- Adapters:** Polysulfone
- Wireholder:** Polysulfone
- Float Stop:** Polyethylene
- Union Nuts:** Nylon
- O-Rings:** Viton
- Scale:** Permanent, dual scale silkscreen (black ink)
- Accuracy:** ± 2% of full scale reading

Your OMEGA FL45200A Series

- Your OMEGA flowmeter was designed to be easy to install.
- Please read the Instruction Guideline on the next page before installing your flowmeter.
- This flowmeter is an instrument, special care should be taken when handling and installing.

INSTALLATION INSTRUCTIONS

Remember that you are installing an instrument. Adapters and fittings should be tightened only enough to prevent leaking. Over tightening may damage the o-ring seals and threaded fittings.

Never hold the meterbody with pliers or similar tools that may scratch.

Never allow the flowmeter to support the weight of related pipe or tubing.

Be certain the meterbody is properly aligned with existing plumbing.

Misalignment will put excessive stress on the meterbody and may result in damage and a decrease in the maximum pressure. If in doubt regarding proper plumbing procedures, consult a licensed plumber.

The flowmeter must be installed in an exact vertical plane to ensure accuracy.

Polysulfone is adversely affected by ultraviolet light. Protect the flowmeter from direct sunlight.

Always use teflon® tape thread sealant. DO NOT use pipe dope compounds as these products may cause crazing and cracking on the meterbody.

Do not use solvent based glued (such as PVC cement) while the flowmeter is fully installed. When using these glues, remove the meterbody until the glue has cured. Then purge the system before installing the unit.

Never attempt to solder brass fittings while the flowmeter is fully installed. The heat required for soldering can damage the flowmeter.

Caution should be exercised when using ball type valves. In some cases when the valve is opened the float can slam to the top of the meter causing damage. This "Water Cannon" effect is actually exceeding the maximum pressure and is not covered under warranty.

Your flowmeter had been designed to be virtually maintenance free. Should your unit need occasional cleaning, use a mild soap and soft bottle brush.

Be sure to note the floats "UP" position before disassembling the meter.

Caution: Follow these instructions to avoid failure.

Danger: Wear eye protection when installing or removing flowmeter.

1. Polysulfone and other exotic plastics cannot tolerate PVC Glue and /or pipe dope. even fumes can cause crazing.

2. If you are installing your flowmeter to a glued pipe configuration, install flowmeter after all glued fittings are dried and lines are purged of all fumes.

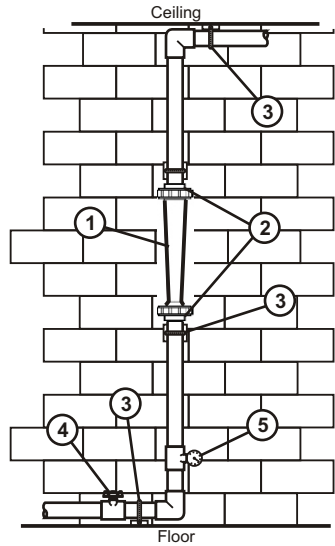
Use Teflon® tape (or similar) for the flowmeters threaded adapters.

Hand tighten union nuts. *No wrenches.*

3. Wall, floor, and ceiling mounts are to be carefully aligned and sturdy. Wall, floor, and ceiling supports are recommended as needed.

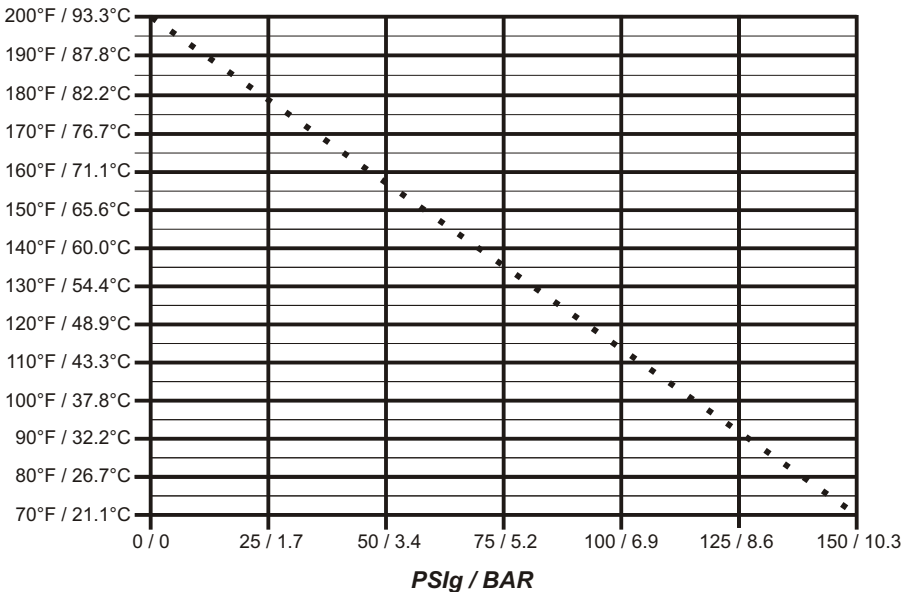
4. Valves - Avoid a system that will impose a sudden burst of flow to the meter. Such a burst will cause the float to impact the float stop with destructive force. Magnet, solenoid, or other quick opening valves cannot be used unless meter is protected against sudden bursts of flow.

5. The maximum working pressure should not exceed 150 psi at ambient temperature.



Maximum Temperature vs. Pressure

Temperature





WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is void if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture, or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

OMEGA is glad to offer suggestions on the use of its various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

Every precaution for accuracy has been taken in the preparation of this manual; however, OMEGA ENGINEERING, INC. Neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in this manual.

SPECIAL CONDITION: Should this equipment be used in or with any nuclear installation or activity, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the equipment in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA ENGINEERING Customer Service Department. **BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS).** The assigned AR number should then be marked on the outside of the return package and on any correspondence.

FOR **WARRANTY** RETURNS, please have the following information available before contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific Problems relative to the Product

FOR **NON WARRANTY** REPAIRS OR **CALIBRATION**, consult OMEGA for current repair/calibration charges. Have the following information available before contacting OMEGA:

1. P.O. Number to cover the COST of the repair/calibration,
2. Model and serial number of product, and
3. Repair instructions and/or specific Problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering. OMEGA is a registered trademark of OMEGA ENGINEERING, INC. ©Copyright 1995 OMEGA ENGINEERING, INC. All rights reserved. This documentation may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without written consent of OMEGA ENGINEERING, INC.

Where Do I Find Everything I Need For Process Measurement and Control?

OMEGA... Of Course!

Shop on line at www.Omega.com

TEMPERATURE

- Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- Wire: Thermocouple, RTD & Thermistor
- Calibrations & Ice Point References
- Recorders, Controllers & Process Monitors
- Infrared Pyrometers

PRESSURE / STRAIN FORCE

- Transducers & Strain Gauges
- Load Cells & Pressure Gauge
- Displacement Transducers
- Instrumentation & Accessories

FLOW / LEVEL

- Rotameters, Gas Mass Flowmeters & Flow Computers
- Air Velocity Indicators
- Turbine / Paddlewheel Systems
- Totalizers & Batch Controllers

pH / CONDUCTIVITY

- pH Electrodes, Testers & Accessories
- Benchtop / Laboratory Meters
- Controllers, Calibrators, Simulators & Pumps
- Industrial pH & Conductivity Equipment

DATA ACQUISITION

- Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- Wire: Thermocouple, RTD & Thermistor
- Calibrations & Ice Point References
- Recorders, Controllers & Process Monitors
- Infrared Pyrometers

HEATERS

- Heating Cable
- Cartridge & Strip Heaters
- Immersion & Band Heaters
- Flexible Heaters
- Laboratory Heaters

ENVIRONMENTAL MONITORING AND CONTROL

- Metering & Control Instrumentation
- Refractometers
- Pumps & Tubing
- Air, Soil & Water Monitors
- Industrial Water & Wastewater Treatment
- pH, Conductivity & Dissolved Oxygen Instruments